Arizona's Instrument to Measure Standards (AIMS)

Grade 8
Writing, Reading, and Mathematics

Released Items

January 7, 2008

As part of Superintendent Tom Horne's ongoing efforts to improve the communication of academic expectations, the Arizona Department of Education is releasing AIMS DPA Grades 3 through 8 writing, reading, and mathematics items to the public. This release is intended to provide students, parents, teachers, and the community with specific examples of the types of skills being assessed on the AIMS tests. The release begins with writing, followed by reading and mathematics, similar to the AIMS tests.

Included in this release is a previous writing prompt and directions used in the AIMS assessments. Following the writing prompt section are a reading passage, directions, and the items associated with the passage in the form of a mini-test. This passage and related items are from the 2005 and 2006 AIMS administrations. At the conclusion of the reading section, the individual items are presented again with the correct answers and statistical information about each item.

The final section consists of ten mathematics items from the 2006 and 2007 AIMS administrations in the form of a mini-test. At the conclusion of the mathematics section, the individual items are presented again with the correct answers and statistical information about each item.

The statistical information includes:
    1) item identification number;
    2) correct answer;
    3) response probability (P-Value), which represents the percentage of students who answered the question correctly;
    4) Rasch difficulty, which measures the difficulty of the item on a scale in which -3 indicates a very easy item and +3 indicates an extremely difficult item; and
    5) performance objective that the item aligns to in the 2003 standards.

The items are reproductions of the actual items as they appeared on the AIMS tests. If you have any questions, please contact Frank Brashear, Director of Test & Item Development, at (602) 542-5031.

WRITING

WRITING

Writing

Directions: **Read the writing prompt below. Use the next page for your prewriting and planning. Then write your draft on pages 6 and 7.**

> Space travel is becoming more common every year. Imagine you have the chance to travel in space and live on another planet.
>
> Write a story about your first day on this planet.

Your writing should:

- describe the events of your day
- describe the setting
- include dialogue if needed
- use descriptive words and phrases of figurative language

Remember to edit for spelling, grammar, punctuation, and capitalization.

Go On ➡

WRITING

Use the prewriting and planning space below for notes, lists, webs, outlines, and anything else that might help you plan your writing.

Prewriting and Planning

Go On

DIRECTIONS: **Write your draft on the following lines. Refer to the writing prompt and your prewriting and planning space as you write your draft.**

Draft

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Go On ➡

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Go On ➡

DIRECTIONS: **Now you are going to revise your draft. Read your draft, then use the questions in the Writer's Checklist as a guide to make your changes. Check each box if you can answer "yes" to that question.**

Writer's Checklist

Does my paper have a specific audience and a specific purpose?

Does my paper contain a strong controlling idea?

Does my paper stay on topic?

Does my paper include specific and relevant details, reasons, and examples?

Does my paper have an effective beginning, middle, and end?

Does my paper progress in a logical order, and do my ideas flow smoothly?

Does my paper contain words that make it interesting?

Does my paper contain sentences that are clear and varied in structure?

Does my paper include effective use of paragraphing?

Does my paper include correct grammar/usage, punctuation, capitalization, and spelling?

DIRECTIONS: **For each box you did not check, make a change on your draft. Then write your final version in your Test Book /Answer Document.**

READING

Directions: Read the passage. Then answer Numbers 1 through 7.

LEXILE: 1030L

Memo to the Track-and-Field Team

To   Centerville Junior High School Track-and-Field Athletes

From   Kurt Spielmann, Track-and-Field Coach

Date   Friday, May 7

Subject   Volunteers for the Centerville Elementary School Track-and-Field Day

The Centerville Elementary School Track-and-Field Day is planned for May 28, and we will host the event on our campus. The meet begins at 3:30 P.M. and runs until approximately 6:30 P.M. The Centerville Elementary School coaches, Coach Bennington and Coach Rollins, are looking for CJHS athletes to help run the meet.

Athletes who volunteer will be excused from their seventh-period class on May 28. Volunteers will assemble at the Centerville Junior High School gymnasium at 2:30 P.M. and report to Coach Bennington. She will be in charge of all volunteers, and at that time she will confirm assigned responsibilities for the meet and provide all necessary instructions.

Anyone arriving late to the gym will be marked tardy to seventh period. All team members are to remain at the meet until signed out by Coach Bennington, Coach Rollins, or me.

Please read the attached sign-up sheet and indicate any areas in which you are willing to volunteer. If we have enough volunteers, you will be responsible for only one specific area. I will sort the information and post a list of volunteers and assigned duties.

If you are a track team member and you are not on the volunteer list, you are to attend your seventh-period class. We will meet after school at the gym at our normal practice time, but you do not need to change clothes for practice. As a team, we will attend the track-and-field event. This is a golden opportunity to support the younger athletes; they are the future of our team. Plan to practice your leadership skills and demonstrate your best sportsmanship.

Team, I appreciate your excellent attitudes and willingness to give 110%, both on and off the field. It is a pleasure working with you this season, and I look forward to our afternoon with the young people of Centerville Elementary School.

In case of unfavorable weather, anticipate an announcement during sixth period.

Go On ➡

RETURN THIS ENTIRE FORM TO COACH SPIELMANN BEFORE MAY 25

Volunteer _____

Seventh-Period Class _____

Centerville Elementary School Track-and-Field Day Events

Sack Race
Take Measurements ____ Record Stats ____ Manage Rosters ____
Long Jump
Take Measurements ____ Record Stats ____ Manage Rosters ____
Shot Put
Take Measurements ____ Record Stats ____ Manage Rosters ____
Relay Race
Manage Equipment ____ Record Stats ____ Manage Rosters ____
High Jump
Manage Equipment ____ Record Stats ____ Manage Rosters ____
Egg Toss
Run Time Clocks ____ Record Stats ____ Manage Rosters ____
Sprints
Run Time Clocks ____ Record Stats ____ Manage Rosters ____
Snack Bar
Serve Food ____ Serve Drinks ____ Clean Up ____
Post-Meet
Store Equipment ____
Cover Jump Pits ____

General Cleanup ____ (Check here. It is our field, so we will all pitch in.)

HAVE YOUR SEVENTH-PERIOD TEACHER FILL OUT THIS SECTION

The student named above has my permission to miss seventh period on May 28 for the purpose of volunteering at the Centerville Elementary School Track-and-Field Day. The student will be responsible for the following classroom assignments:

_____

_____

_____

Teacher's Signature _____

Go On ➡

1. Which detail is clearly stated in the memo?

A where the volunteers will meet

B how many students will attend

C what announcements will be made

D when the volunteer list will be posted

2. Which students must be signed out before they can leave the track meet?

A only volunteers

B all team members

C only non-volunteers

D seventh-period students

3. Who will host the Centerville Elementary School Track-and-Field Day?

A Centerville Coach Rollins

B Centerville Elementary School

C Centerville Coach Bennington

D Centerville Junior High School

Go On ➡

4. What happens to volunteers who are late to the gym?

   A They will not be allowed to participate.

   B They are marked tardy to seventh period.

   C They will do additional physical exercise.

   D They are sent to their seventh-period class.

5. What was the author's purpose for writing this memo?

   A to explain the types of events

   B to recruit volunteers for the meet

   C to persuade students to join the team

   D to encourage athletes to do their best

6. Which is the only event that is required for everyone?

   A cleanup

   B relay race

   C snack bar

   D volunteer

Go On ➡

7. Which statement applies to students on the volunteer list?

    A   They check into class at seventh period.

    B   They are excused from practice that week.

    C   They will be changing clothes for practice.

    D   They will be excused from seventh period.

Item	Reading Item Data

1

Reading Item Data

Item Number	3301670	Correct Answer	A	P-Value	.75	Equated Rasch Value	-0.5170

2003 Reading Standard Alignment is Strand **1** – Concept **6** – Performance Objective **7**

Which detail is clearly stated in the memo?

A where the volunteers will meet

B how many students will attend

C what announcements will be made

D when the volunteer list will be posted

2

Reading Item Data

Item Number	3301671	Correct Answer	B	P-Value	.50	Equated Rasch Value	0.8488

2003 Reading Standard Alignment is Strand **3** – Concept **2** – Performance Objective **3**

Which students must be signed out before they can leave the track meet?

A only volunteers

B all team members

C only non-volunteers

D seventh-period students

3

Reading Item Data

Item Number	3301673	Correct Answer	D	P-Value	.41	Equated Rasch Value	1.3009

2003 Reading Standard Alignment is Strand **1** – Concept **6** – Performance Objective **7**

Who will host the Centerville Elementary School Track-and-Field Day?

A Centerville Coach Rollins

B Centerville Elementary School

C Centerville Coach Bennington

D Centerville Junior High School

Item	Reading Item Data

4

Item Number	3301672	Correct Answer	B	P-Value	.82	Equated Rasch Value	-1.0839

2003 Reading Standard Alignment is Strand **1** – Concept **6** – Performance Objective **7**

What happens to volunteers who are late to the gym?

A They will not be allowed to participate.

B They are marked tardy to seventh period.

C They will do additional physical exercise.

D They are sent to their seventh-period class.

Reading Item Data

5

Item Number	3301679	Correct Answer	B	P-Value	.70	Equated Rasch Value	-0.2198

2003 Reading Standard Alignment is Strand **3** – Concept **1** – Performance Objective **4**

What was the author's purpose for writing this memo?

A to explain the types of events

B to recruit volunteers for the meet

C to persuade students to join the team

D to encourage athletes to do their best

Reading Item Data

6

Item Number	3301683	Correct Answer	A	P-Value	.61	Equated Rasch Value	0.1751

2003 Reading Standard Alignment is Strand **3** – Concept **1** – Performance Objective **10**

Which is the only event that is required for everyone?

A cleanup

B relay race

C snack bar

D volunteer

7	Reading Item Data						
	Item Number	3301674	Correct Answer	D	P-Value	.83	Equated Rasch Value	-1.0702

2003 Reading Standard Alignment is Strand **3** – Concept **1** – Performance Objective **5**

Which statement applies to students on the volunteer list?

A   They check into class at seventh period.

B   They are excused from practice that week.

C   They will be changing clothes for practice.

D   They will be excused from seventh period.

MATHEMATICS

Mathematics

DIRECTIONS: Read each question and choose the best answer.

1. Which set contains only irrational numbers?

A $\left\{-8, \ -\sqrt{4}, \ \sqrt{3}, \ \sqrt{16}\right\}$

B $\left\{-\sqrt{64}, \ \sqrt{0}, \ \sqrt{19}, \ \sqrt{13}\right\}$

C $\left\{-\sqrt{26}, \ -\sqrt{16}, \ \sqrt{2}, \ \sqrt{8}\right\}$

D $\left\{-\sqrt{50}, \ -\sqrt{13}, \ \sqrt{10}, \ \sqrt{54}\right\}$

2. The spinner shown below is divided into sections so that the area of each blue section is $\frac{1}{4}$ the area of the spinner. The area of each of the remaining sections is $\frac{1}{8}$ the area of the spinner.
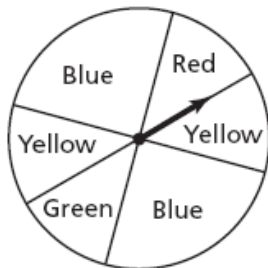
What is the probability of spinning the arrow once and getting an outcome of blue?

A $\frac{1}{8}$

B $\frac{1}{4}$

C $\frac{1}{3}$

D $\frac{1}{2}$

Go On ➡

3. Brianna is planting flowers in her garden. Each row of flowers repeats in the sequence shown below.

- 2 mums
- 3 zinnias
- 4 snapdragons
- 3 petunias
- 2 daisies

Brianna has planted 38 flowers. Which type of flower will she plant next?

A   zinnia

B   snapdragon

C   petunia

D   daisy

4. Jake designed a map that shows the number of minutes it takes to travel between his and his friends' houses.
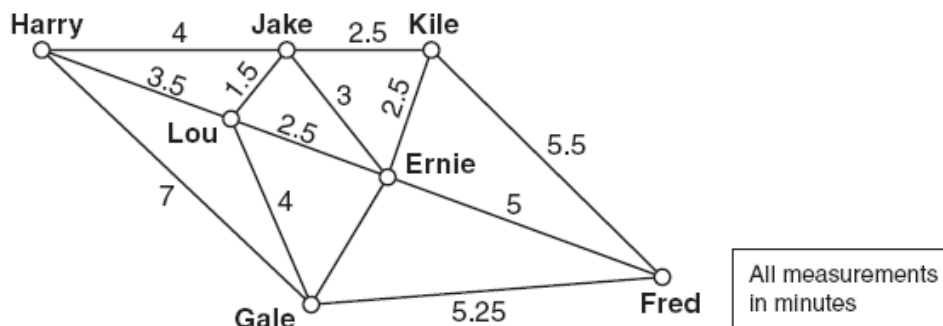
Note: The figure is not drawn to scale.

Which of these routes takes the **longest** time to get from Jake's house to Fred's house?

A   Jake's → Kile's → Fred's

B   Jake's → Ernie's → Fred's

C   Jake's → Lou's → Ernie's → Fred's

D   Jake's → Kile's → Ernie's → Fred's

Go On ➡

**5.** Four students in a group each chose a number.

Clues
- Dave's number is less than Geoff's number.
- Judy's number is greater than Mario's number.
- Geoff and Mario have the same number.
- Judy's number is greater than Dave's number.

Based on the clues, which could show the number chosen by each group member?

A Dave: 1, Geoff: 3, Judy: 7, Mario: 2

B Dave: 2, Geoff: 8, Judy: 6, Mario: 8

C Dave: 6, Geoff: 7, Judy: 9, Mario: 7

D Dave: 10, Geoff: 5, Judy: 9, Mario: 5

6. In the diagram below, transversal *t* intersects parallel lines *m* and *n*.

Which of the following angles is **not** congruent to ∠1?

A ∠3

B ∠5

C ∠7

D ∠8

Go On ➡
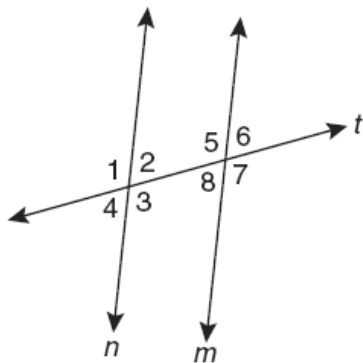
7. Kara formed a pattern using the following steps.

- She chose −1 as the first term.
- Each term after the first was two more than the immediately previous term.
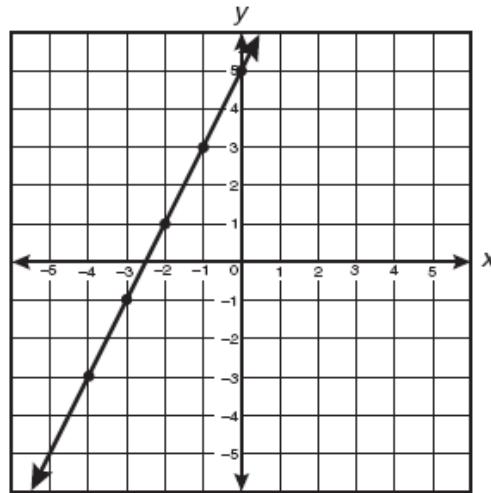
What are the first five terms of Kara's sequence?

A −1, −2, −4, −8, −10

B −1, 0, 2, 4, 6

C −1, 1, 3, 5, 7

D −1, 0, 3, 5, 7

8. Which of the following is the solution to the equation below?

$$2x + 3 = 13$$

A $x = 5$

B $x = 8$

C $x = 20$

D $x = 32$

Go On ▶

9. Which table contains only coordinates of points that appear to be on the line shown below?

x	y
0	4
1	3
2	1

A

x	y
0	−4
−1	−3
−2	−1

C

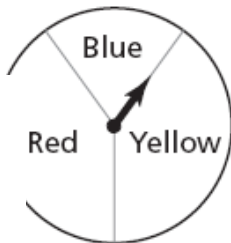| x	y
−1	3
−3	−1
−4	−3

B

x	y
3	−1
−3	−1
−4	−3

D

Go On ➡

10. Six students in Mr. Salazar's math class conducted a probability experiment. Each student was asked to flip a quarter and spin the arrow on a colored spinner.
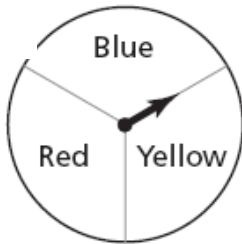
The results of the experiment are shown below.

John: Heads/Blue   Sally: Heads/Blue
Mary: Heads/Red   Zeke: Tails/Yellow
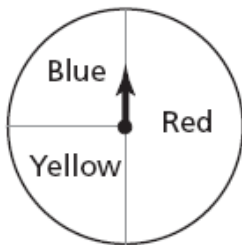Paul: Tails/Blue   Jill: Tails/Blue

If the experimental results closely match the theoretical probability of the colored spinner, which of these is **most likely** the spinner that was used?
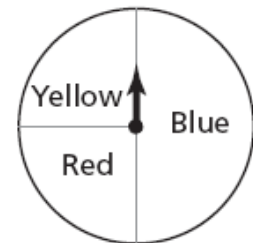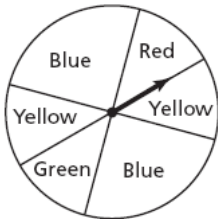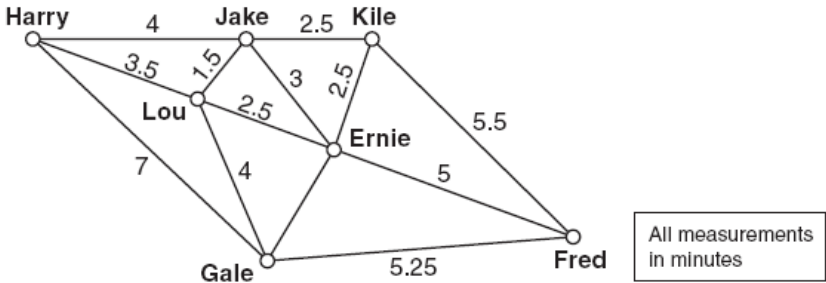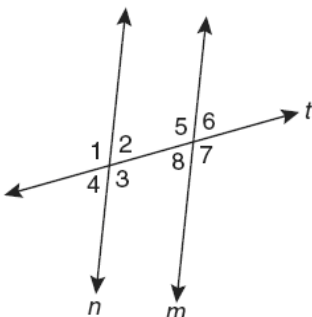

B

C

D

Item	Mathematics Item Data						
1	Item Number	3267941	Correct Answer	D	P-Value	.38	Equated Rasch Value	1.5492
	2003 Mathematics Standard Alignment is Strand **1** – Concept **1** – Performance Objective **3**						

Which set contains only irrational numbers?

A $\left\{-8, \ -\sqrt{4}, \ \sqrt{3}, \ \sqrt{16}\right\}$

B $\left\{-\sqrt{64}, \ \sqrt{0}, \ \sqrt{19}, \ \sqrt{13}\right\}$

C $\left\{-\sqrt{26}, \ -\sqrt{16}, \ \sqrt{2}, \ \sqrt{8}\right\}$

D $\left\{-\sqrt{50}, \ -\sqrt{13}, \ \sqrt{10}, \ \sqrt{54}\right\}$

Item							
2	Item Number	3139518	Correct Answer	D	P-Value	.59	Equated Rasch Value	0.1753
	2003 Mathematics Standard Alignment is Strand **2** – Concept **2** – Performance Objective **3**						

The spinner shown below is divided into sections so that the area of each blue section is $\frac{1}{4}$ the area of the spinner. The area of each of the remaining sections is $\frac{1}{8}$ the area of the spinner.

What is the probability of spinning the arrow once and getting an outcome of blue?

A $\frac{1}{8}$

B $\frac{1}{4}$

C $\frac{1}{3}$

D $\frac{1}{2}$

3	Item Number	3267918	Correct Answer	C	P-Value	.47	Equated Rasch Value	1.2123
	2003 Mathematics Standard Alignment is Strand **3** – Concept **1** – Performance Objective **3**							

Brianna is planting flowers in her garden. Each row of flowers repeats in the sequence shown below.

- 2 mums
- 3 zinnias
- 4 snapdragons
- 3 petunias
- 2 daisies

Brianna has planted 38 flowers. Which type of flower will she plant next?

A zinnia

B snapdragon

C petunia

D daisy

4	Item Number	3268037	Correct Answer	D	P-Value	.65	Equated Rasch Value	0.1003
	2003 Mathematics Standard Alignment is Strand **2** – Concept **4** – Performance Objective **1**							

Jake designed a map that shows the number of minutes it takes to travel between his and his friends' houses.

Note: The figure is not drawn to scale.

Which of these routes takes the **longest** time to get from Jake's house to Fred's house?

A Jake's → Kile's → Fred's

B Jake's → Ernie's → Fred's

C Jake's → Lou's → Ernie's → Fred's

D Jake's → Kile's → Ernie's → Fred's

5	Item Number	3268113	Correct Answer	C	P-Value	.78	Equated Rasch Value	-0.7150

2003 Mathematics Standard Alignment is Strand **5** – Concept **2** – Performance Objective **1**

Four students in a group each chose a number.

Clues
- Dave's number is less than Geoff's number.
- Judy's number is greater than Mario's number.
- Geoff and Mario have the same number.
- Judy's number is greater than Dave's number.

Based on the clues, which could show the number chosen by each group member?

A Dave: 1, Geoff: 3, Judy: 7, Mario: 2

B Dave: 2, Geoff: 8, Judy: 6, Mario: 8

C Dave: 6, Geoff: 7, Judy: 9, Mario: 7

D Dave: 10, Geoff: 5, Judy: 9, Mario: 5

6	Item Number	3267965	Correct Answer	D	P-Value	.65	Equated Rasch Value	0.0145

2003 Mathematics Standard Alignment is Strand **4** – Concept **1** – Performance Objective **6**

In the diagram below, transversal t intersects parallel lines m and n.

Which of the following angles is **not** congruent to ∠1?

A ∠3

B ∠5

C ∠7

D ∠8

	Item Number	3139531	Correct Answer	C	P-Value	.69	Equated Rasch Value	-0.3524
7	2003 Mathematics Standard Alignment is Strand **3** – Concept **1** – Performance Objective **3**							

Kara formed a pattern using the following steps.

- She chose −1 as the first term.
- Each term after the first was two more than the immediately previous term.

What are the first five terms of Kara's sequence?

A −1, −2, −4, −8, −10

B −1, 0, 2, 4, 6

C −1, 1, 3, 5, 7

D −1, 0, 3, 5, 7

	Item Number	3014907	Correct Answer	A	P-Value	.88	Equated Rasch Value	-1.6596
8	2003 Mathematics Standard Alignment is Strand **3** – Concept **3** – Performance Objective **9**							

Which of the following is the solution to the equation below?

$$2x + 3 = 13$$

A $x = 5$

B $x = 8$

C $x = 20$

D $x = 32$

	Item Number	3267999	Correct Answer	B	P-Value	.66	Equated Rasch Value	0.0595
9	2003 Mathematics Standard Alignment is Strand **4** – Concept **3** – Performance Objective **1**							

Which table contains only coordinates of points that appear to be on the line shown below?

x	y
0	4
1	3
2	1

A

x	y
0	−4
−1	−3
−2	−1

C

x	y
−1	3
−3	−1
−4	−3

B

x	y
3	−1
−3	−1
−4	−3

D

10	Item Number	3014974	Correct Answer	D	P-Value	.82	Equated Rasch Value	-1.1202		
	2003 Mathematics Standard Alignment is Strand **2** – Concept **2** – Performance Objective **2**									

Six students in Mr. Salazar's math class conducted a probability experiment. Each student was asked to flip a quarter and spin the arrow on a colored spinner.

The results of the experiment are shown below.

John: Heads/Blue   Sally: Heads/Blue
Mary: Heads/Red   Zeke: Tails/Yellow
Paul: Tails/Blue   Jill: Tails/Blue

If the experimental results closely match the theoretical probability of the colored spinner, which of these is **most likely** the spinner that was used?

A

B

C

D